

Medical cannabis is associated with
reduced prescription opioid receipt and
pain in adults with chronic pain

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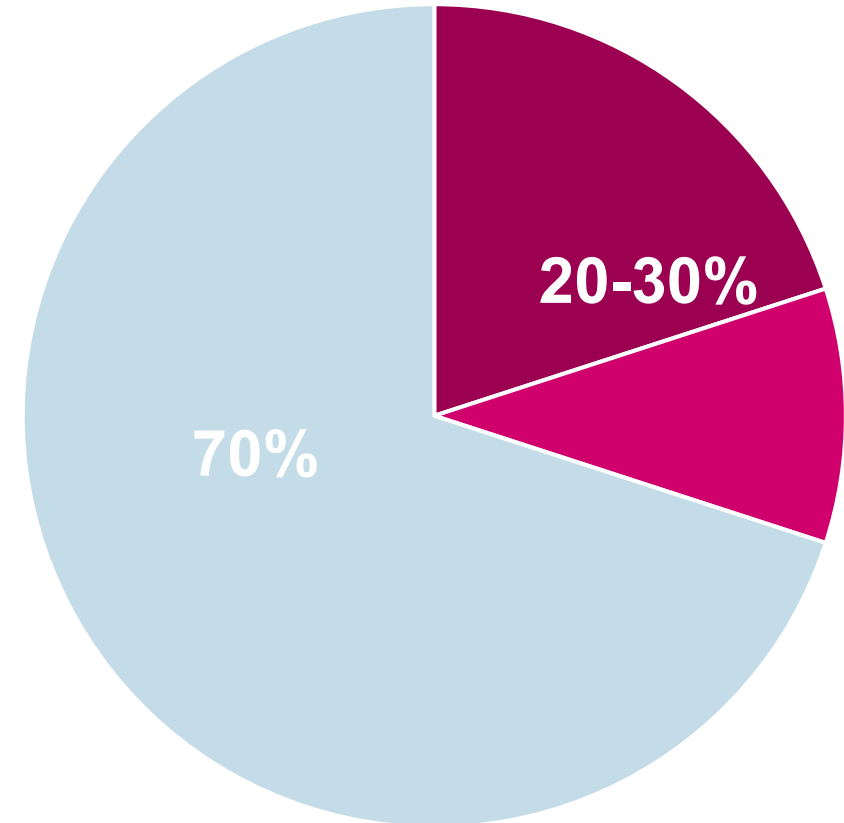
Disclosures

- I have no conflicts of interest to disclose

Background: Pain and Opioids

- Management of chronic pain is challenging
- For many years, opioid analgesics were a leading pain management strategy

Percent of Adults in the US with Chronic Pain



(Johannes CB, et al. *The Journal of Pain* 2010)
(Yong RJ, et al *Pain* 2022)

Background: Pain and Opioids

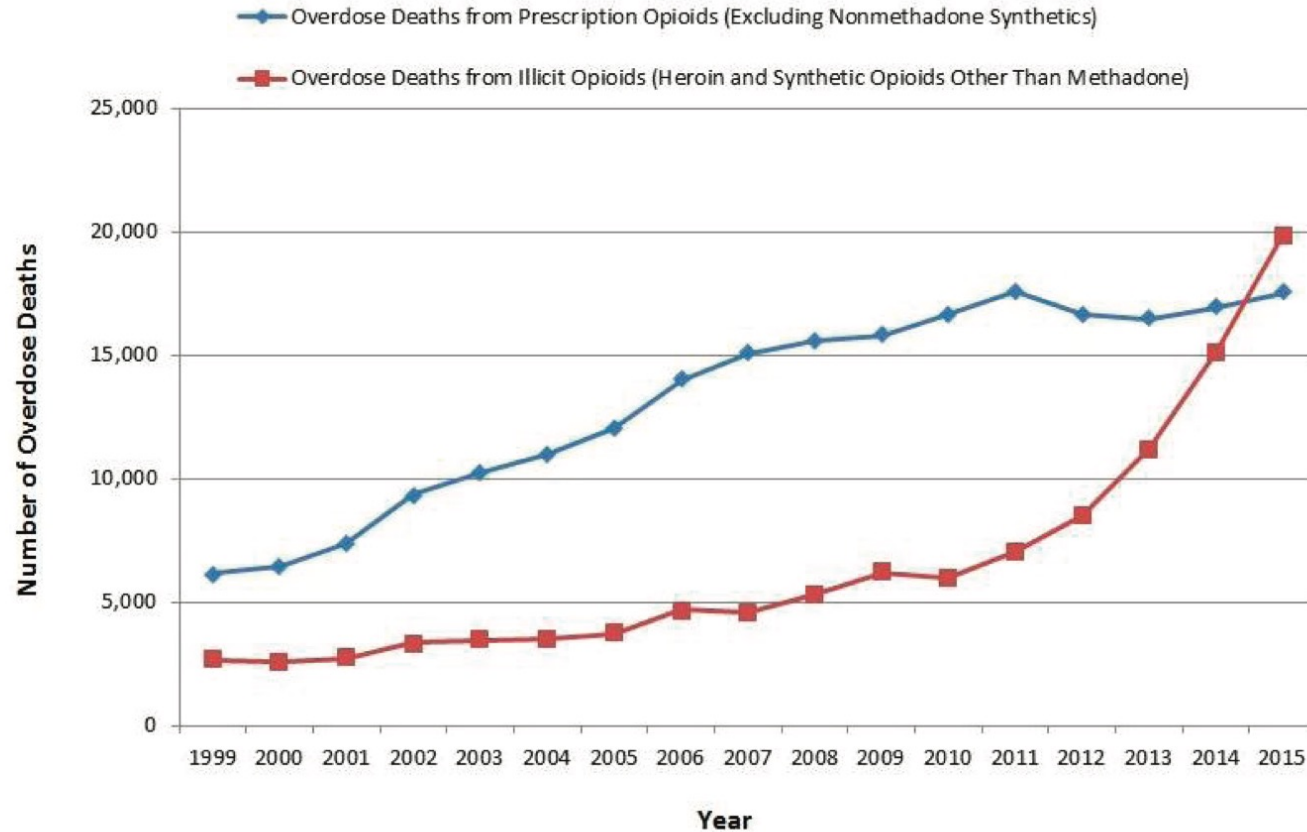
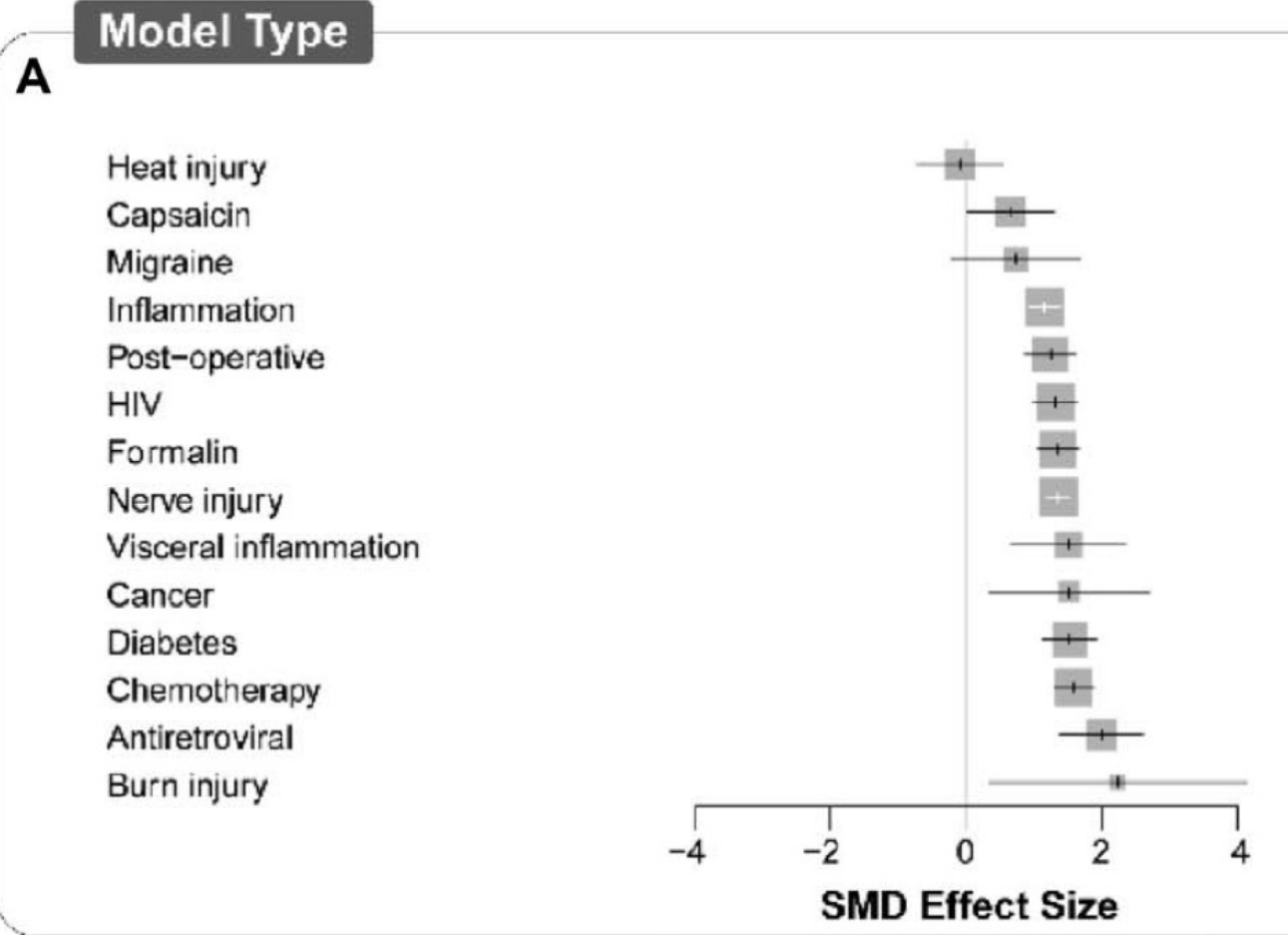


FIGURE 1-2 Number of overdose deaths from prescription and illicit opioids, United States, 1999–2015.
SOURCE: NCHS, 2016.

We need new strategies to address pain management and reduce use of opioids

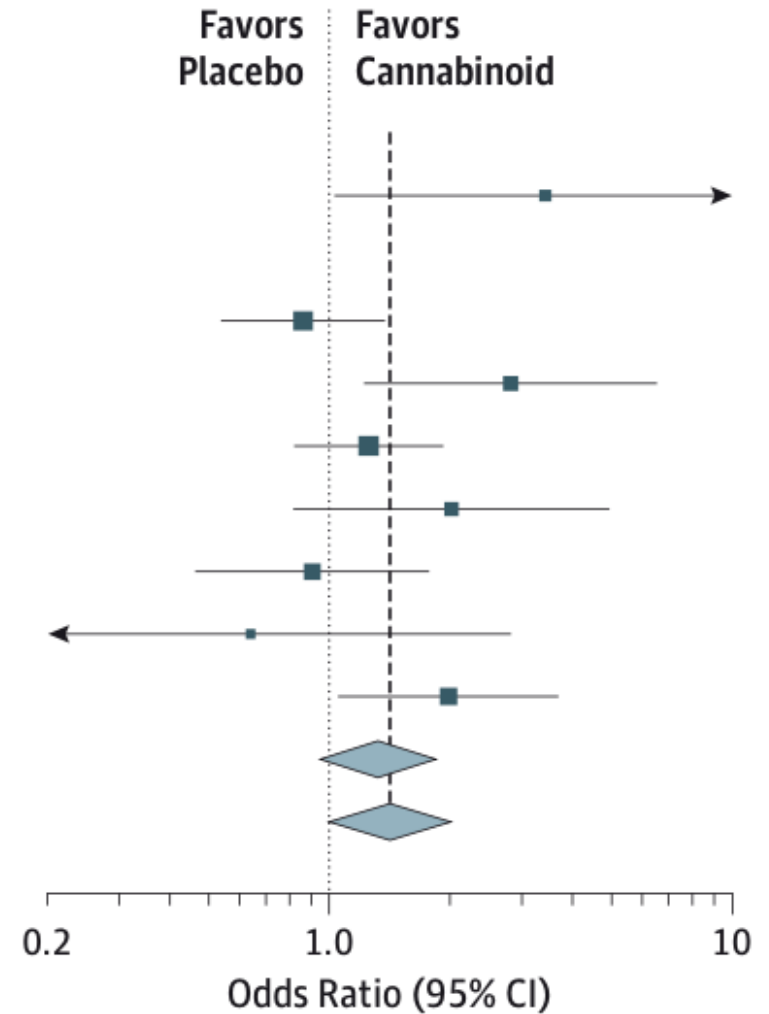
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Background: Cannabis for pain



Cannabis improves pain in animal models
(meta-analysis of 374 studies)

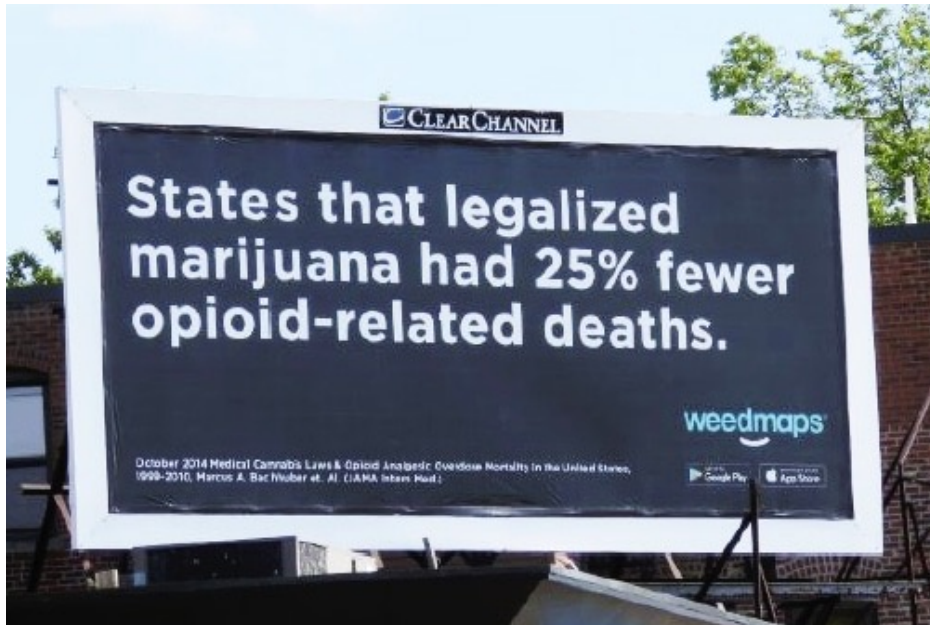
(Soliman et al *Pain* 2021)



Cannabis improves pain in humans
(meta-analysis of 28 studies)

(Whiting, et al *JAMA* 2015)

Background- Medical cannabis and opioid analgesic use



(Bachhuber et al *JAMA Int Med* 2015)

Medical Marijuana Users are More Likely to Use Prescription Drugs Medically and Nonmedically

Theodore L. Caputi, BS and Keith Humphreys, PhD

(J Addict Med 2018)

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Aims and Hypotheses

- Aim 1: To understand how medical cannabis use affects opioid analgesic receipt over time.
 - H1: Medical cannabis use will be associated with a reduction in opioid analgesic receipt over time.
- Aim 2: To understand how medical cannabis use affects pain over time.
 - H2: Medical cannabis use will be associated with a reduction in pain over time.

THE MEMO STUDY



Methods: Recruitment & Eligibility Criteria

Recruitment

- Montefiore's Medical Cannabis Program
- Local medical cannabis dispensaries
- Community medical cannabis providers

September 2018- December 2022

Eligibility Criteria	
Inclusion	Exclusion
≥18 years old	Inability to provide informed consent or complete study visits
English speaking	Using medical cannabis for unique pain syndromes
New certification for medical cannabis in New York State for chronic pain (within 90 days)	Currently/planning on pregnancy or breastfeeding or chestfeeding
Use of prescribed or illicit opioid analgesics in the past 30-days	

Methods: Data sources and analyses

Brief Web-Surveys Every 2-weeks	Full Study Visits Quarterly	New York State Prescription Monitoring Program
Days of medical cannabis use	Pain Severity: Brief Pain Inventory Scale	Current opioid prescription at the date of the web-Survey (dichotomous)
THC/CBD content of medical cannabis used	Pain Interference: Brief Pain Inventory Scale	Mean MME at the date of the web-survey (continuous)
Pain, Enjoyment of Life and General Activity [PEG] Scale		

Analyses

- Descriptive statistics
- Repeated t-tests to assess change in PEG score, pain severity and pain interference
- Repeated Generalized Estimating Equation models to assess change in mean MME over time

Results: Demographics

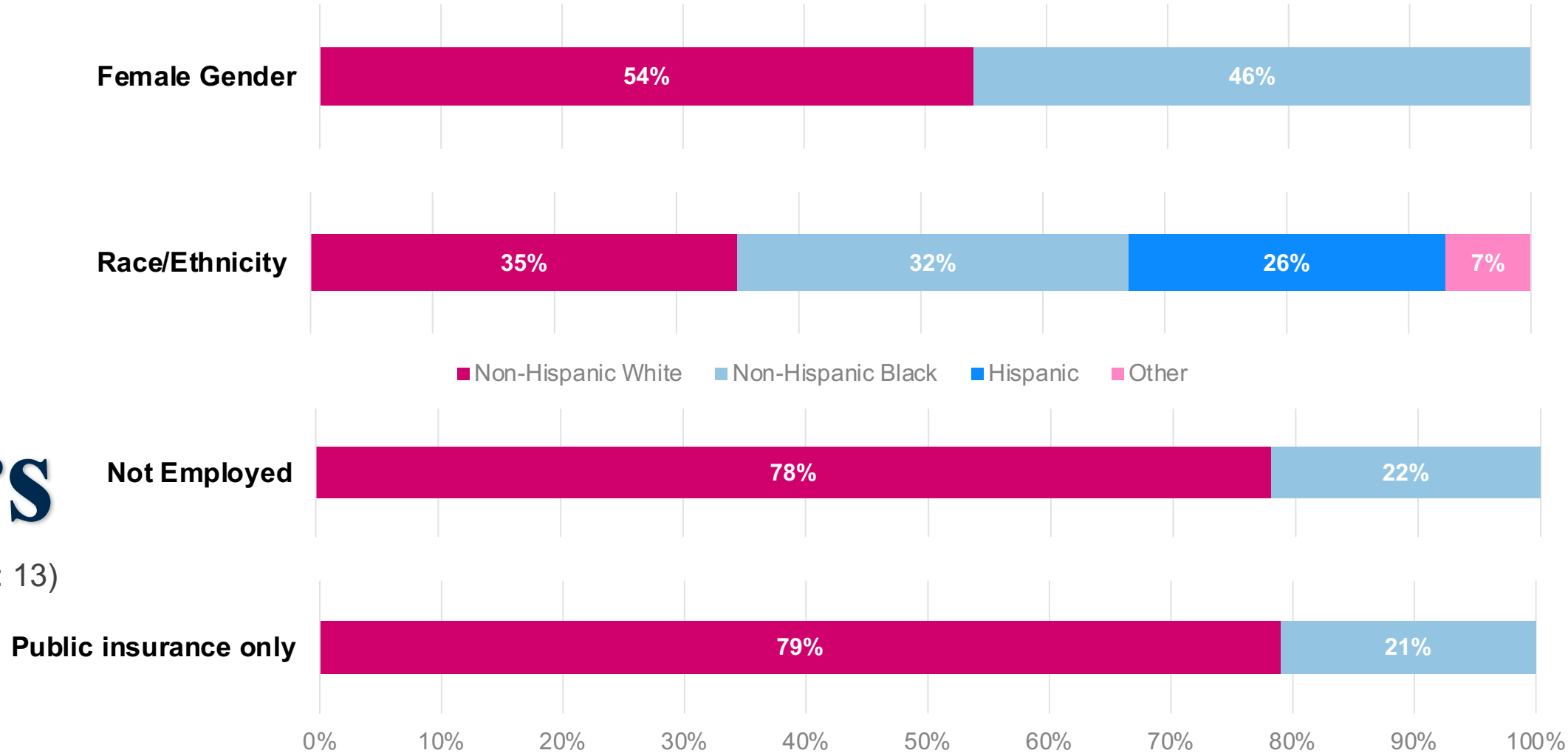
Total sample:

225

Average age:

54 yrs

(Standard Deviation: 13)

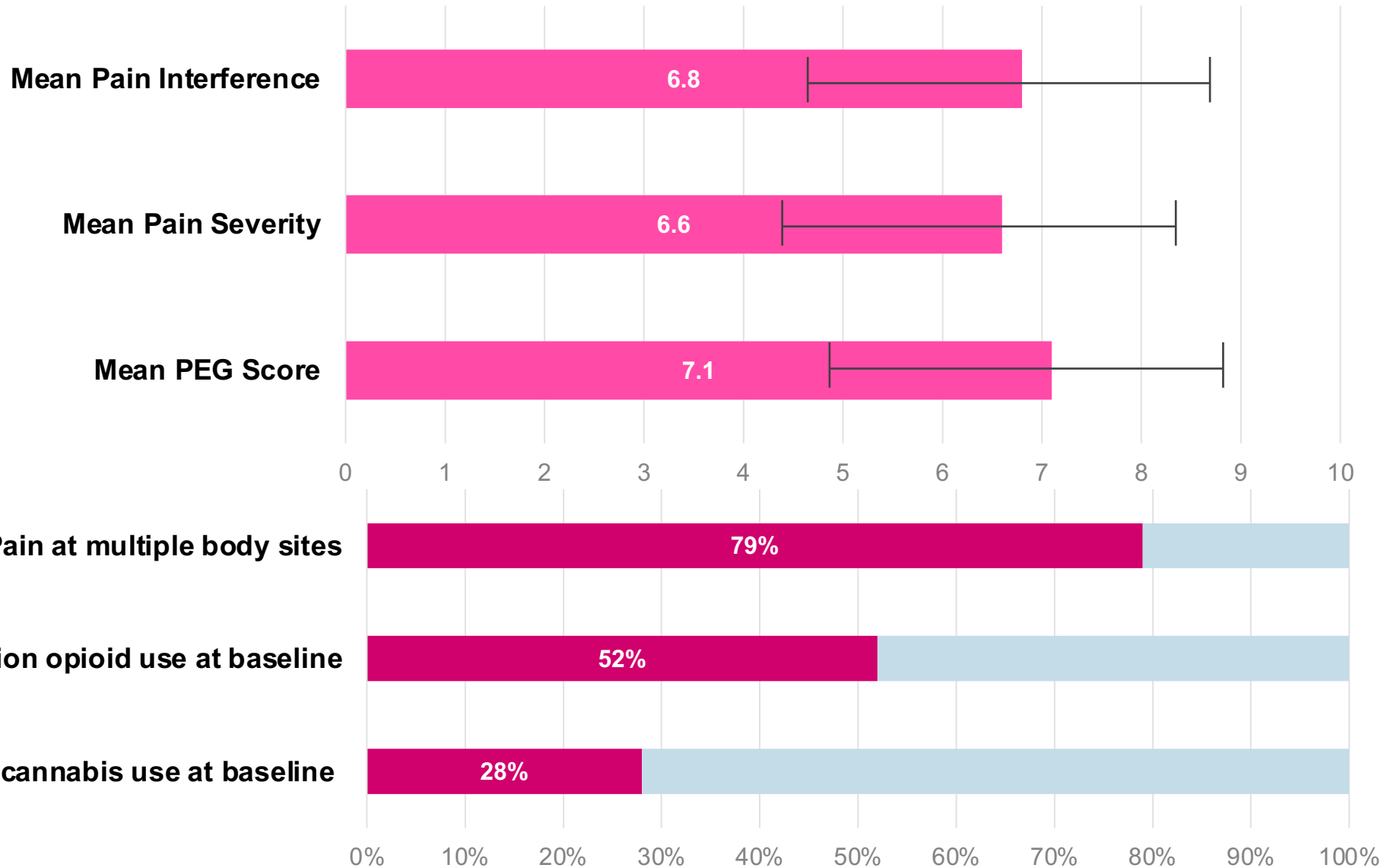


Results: Pain Characteristics

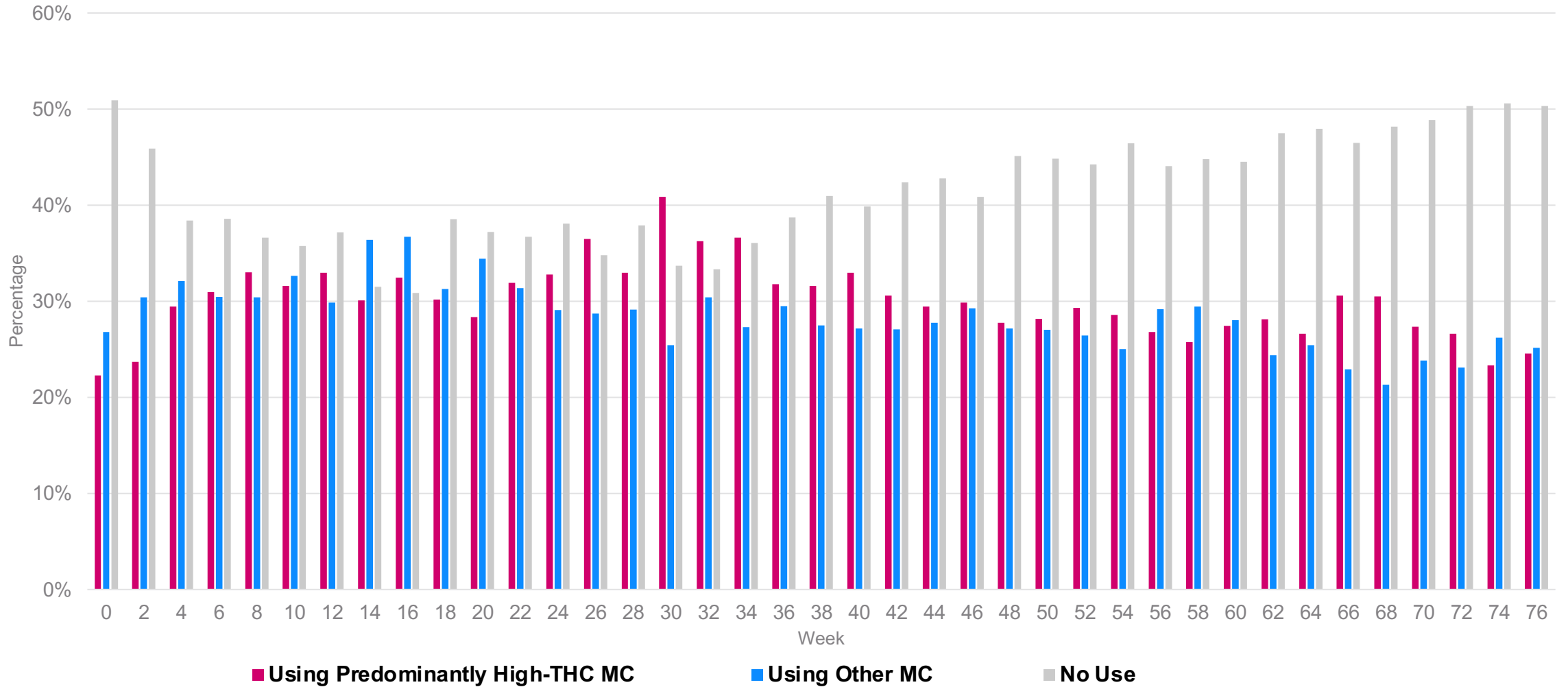
Baseline Mean MME:

65.3

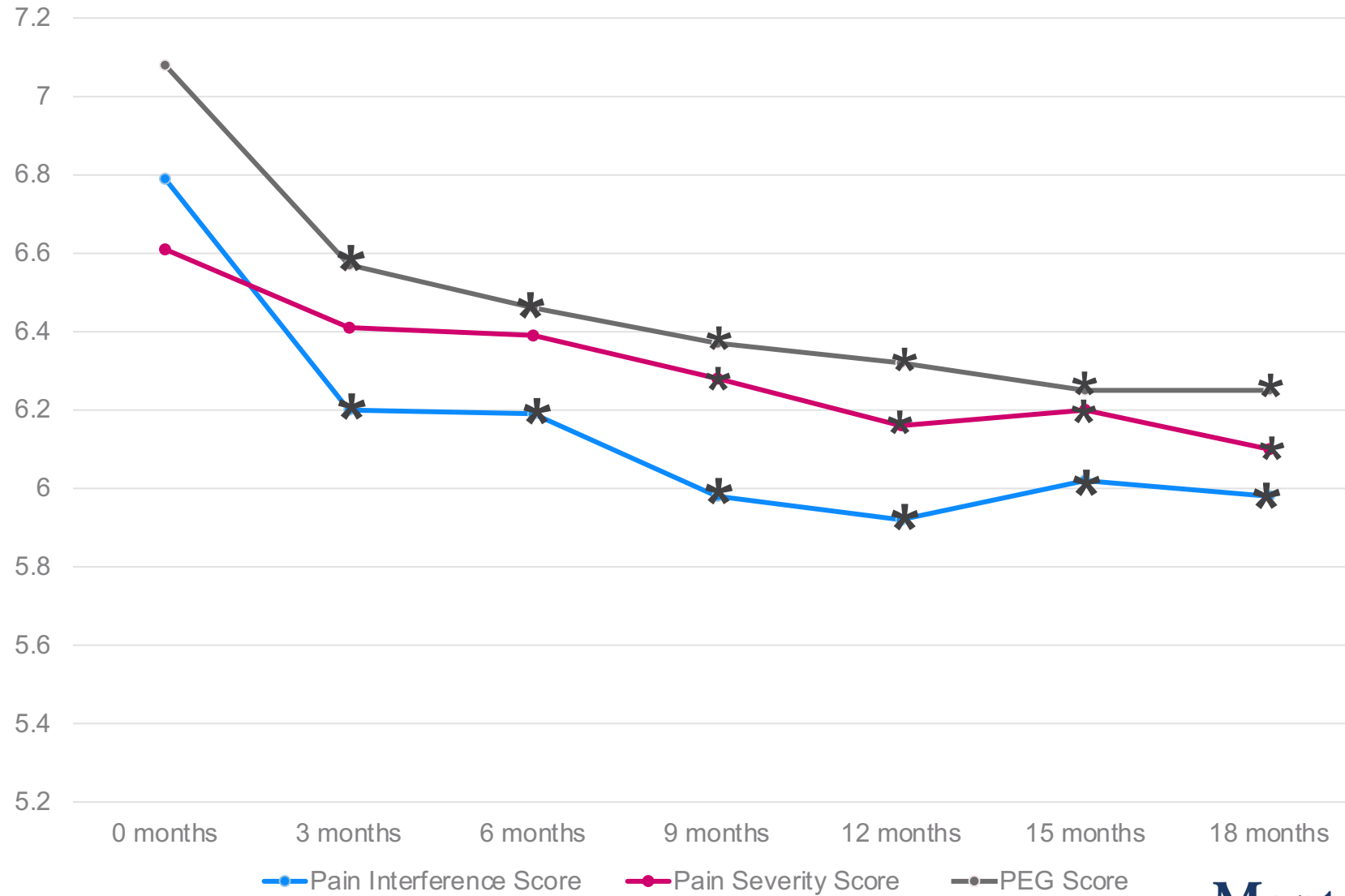
(Standard deviation: 145.4)



Results: Medical cannabis use over time

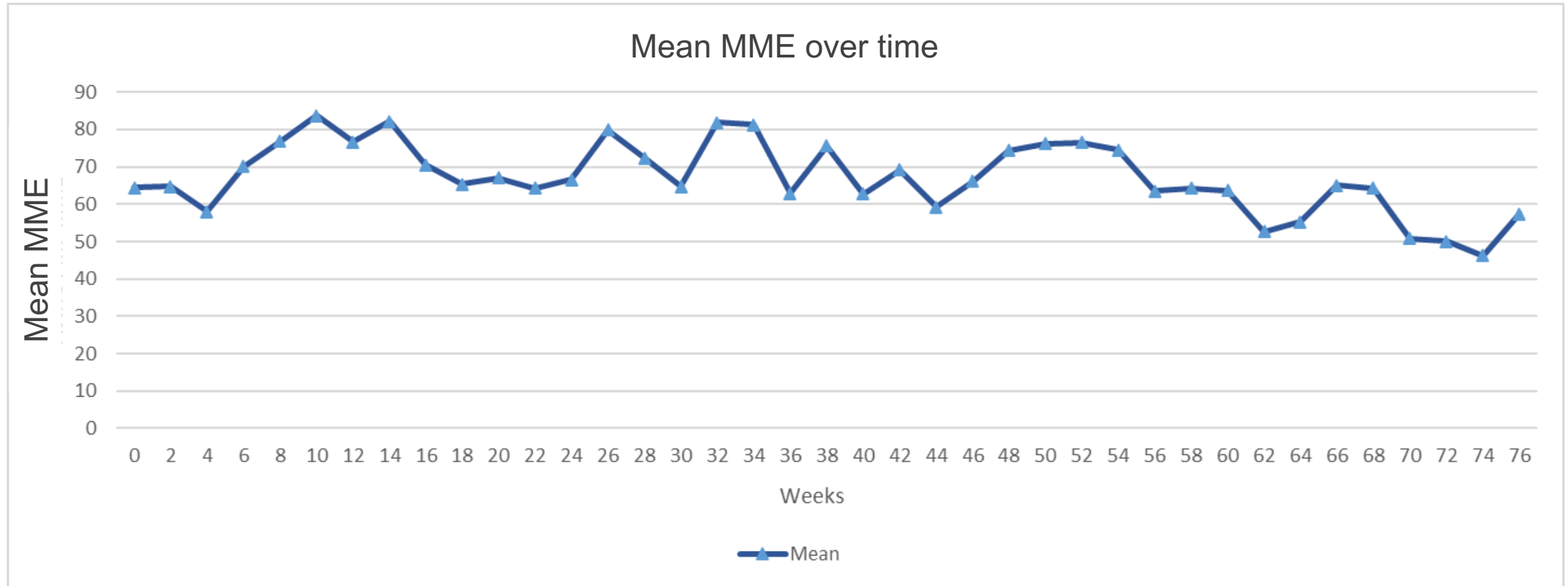


Results: Pain over time



* Significant change from baseline

Results: Current opioid prescription and mean MME over time



- In repeated GEE analyses, there was a downward trend in meanMME over the 18-month study period ($\beta = -0.21$ [CI: -0.4- -0.03], $p=0.03$)
- Participants with current opioid prescription dropped by 20% during the study period (50% \rightarrow 40%)

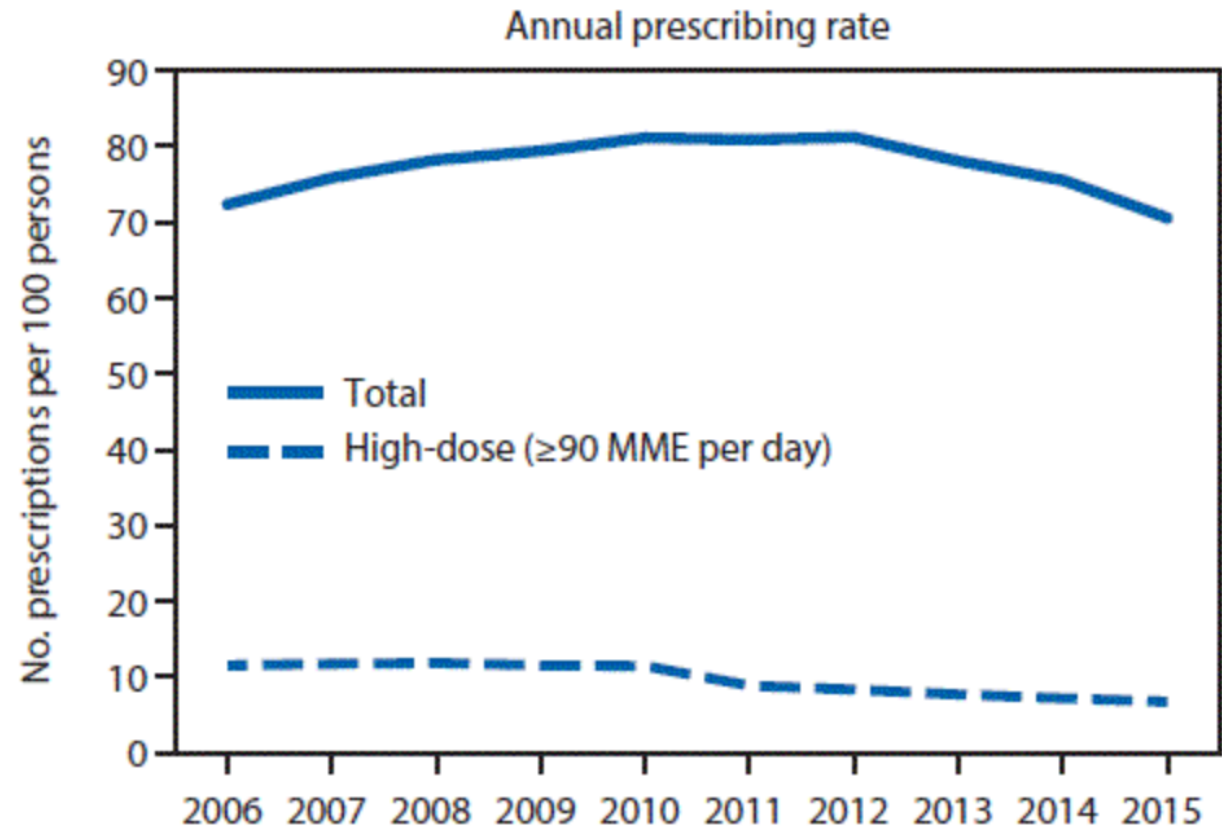
Conclusions

Over 18-months, in a diverse sample of patients, the majority of whom accessed healthcare with public insurance:

- Pain interference, severity and PEG scores reduced
- Number of participants with current opioid prescription dropped by 20%
- There was a statistically significant downward trend in mean MME

Limitations

- Preliminary data
- Cohort studies cannot show us the full picture
- Secular trends of opioid prescribing have reduced over time
- Pain may have improved regardless of cannabis administration (no placebo), leading to reduction in opioid prescribing



(Guy GJ, et al *MMWR* 2017)

Future directions

The MEMO Study:

- Examine change in opioid use within and between subjects
- Repeat analyses with self-reported opioid data
- Examine the association between self-reported cannabinoid content and opioid use

Other studies:

- Foundation-funded RCT testing how coupons for different medical cannabis products (high THC vs 1:1 THC/CBD vs high CBD vs placebo) affect opioid analgesic use (NCT04308148)



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THE **MEMO**  STUDY

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